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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/164,392	09/30/1998	DONG-GYU KIM	33404/DBP/Y3	6608

7590
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01/07/2003

EXAMINER

LANEAU, RONALD

ART UNIT PAPER NUMBER

2674

DATE MAILED: 01/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/164,392

Applicant(s)

KIM, DONG-GYU

Examiner

Ronald Laneau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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Response to Amendment

1. The amendment filed on 12/18/02 has been entered. Claims 1-21 are now pending.
2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 102

3. Claims 1, 4-6, 17, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Moriyama (5,790,092).

RL As per claim 1, ^{MORIYAMA}~~Hashimoto~~ teaches a method of driving a liquid crystal display having a matrix of a plurality of pixels with a common electrode and a pixel electrode, comprising the steps of:

dividing a plurality of pixels into a plurality of groups, each group comprising a plurality of pixels that are adjacent to each other (see figs. 13A, 13B).

applying a common voltage to the common electrode; and

applying a data voltage of a positive polarity and a negative polarity with respect to the common voltage alternately to groups of a plurality of pixels that are adjacently located (see figs. 13A, 13B),

wherein the polarity of the data voltage applied to each of the pixels in each group is the same (see figs. 13A, 13B).

As per claims 4 and 5, Moriyama teaches a method wherein data voltages having the same polarity or different polarities with respect to the common voltage are applied to the adjacent pixels on the same column (see figs. 13A, 13B).

As per claims 6 and 17, Moriyama teaches a liquid crystal display comprising a substrate, a plurality of gate lines formed on the substrate, a plurality of data lines insulated and intersecting the gate lines and transmitting a data voltage; and a plurality of pixels formed corresponding to respective regions defined by the data lines and the gate lines, wherein a common voltage is applied to the plurality of pixels, and wherein polarities of the data voltage with respect to the common voltage are inverted in a unit of pixel group, and wherein the pixel group is comprised of two or more pixels (see figs. 13A, 13B).

As per claim 18, Moriyama teaches an LCD wherein adjacent two pixels in row direction have different polarities of the data voltage. As per claim 7, Moriyama teaches a method wherein the pixel group is comprised of three pixels as claimed (see figs. 13A, 13B). 2B).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 2, 3, 7-16 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriyama (5,790,092) in view of Ito et al (6,172,662).

As per claims 2 and 7, Moriyama does not teach a method wherein the pixel group is comprised of three pixels but Ito et al teach a pixel group which is comprised of three pixels as claimed (see fig. 14).

It would have been obvious to one of ordinary skill in the art to utilize the pixel group comprising of three pixels taught by Ito et al into the teachings of Moriyama because it would not only utilization of Ito et al's frame compositions of figure 14 including x1 to x6 provide the suggestion of grouping the set of three pixels together but would control the unevenness of the display in the direction of the signal electrode (normally the vertical direction) and would not cause an especially severe uneven display in the direction of the signal electrode nor flickering even when the display contents change one after another (see Ito et al , col. 4, lines 5-9)

As per claims 3 and 8, Moriyama does not teach a method wherein the pixel group is comprised of a red pixel, a green pixel, and a blue pixel but Ito et al do teach a pixel group which is a red, a green and a blue as claimed (see fig. 14).

As per claims 9 and 10, see rejection of claim 6. Moriyama and Ito et al do not expressly teach about a distance between a first data line adjacent to the pixel group and a pixel adjacent to the first data line but it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to know that one would increase the distance between the two groups of pixels because it would clearly distinguish one group of pixels from the other.

As per claims 11 and 12, Moriyama and Ito et al do not teach an LCD wherein the gate lines are not only arrange in groups of two but a connecting member connects the first common

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line and second common line but it would have been obvious to one of ordinary skill in the art to utilize an LCD with the gate lines arranged as claimed for the same reasons given in claim 9.

As per claims 13-15, Moriyama and Ito et al do not teach an LCD wherein common lines are connected to common electrodes and a connecting member connects the first common line and a second common line but it would have been obvious to one of ordinary skill in the art to utilize an LCD with the common lines arranged as claimed for the same reasons given in claim 9.

As per claim 16, Hashimoto et al teach a method wherein the pixel group is comprised of a column of red pixels, a column of green pixels, and a column of blue pixels (see fig. 14).

As per claims 19-21, Moriyama and Ito et al do not teach an LCD wherein the common electrode is parallel to the pixel electrode and wherein the common electrode is arranged between the adjacent pixel but it would have obvious to one of ordinary skill in the art to utilize a common electrode as claimed because it would provide an improved display with high reliability for a long time.

Response to Arguments

6. Applicant's arguments with respect to claims on 12/18/02 have been considered but are moot in view of the new ground(s) of rejection.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Laneau whose telephone number is 703-305-3973. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 6:00 PM or via email: ronald.laneau@uspto.gov.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached at 703-305-4709.

8. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

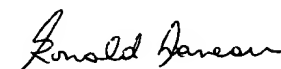
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.


Ronald Laneau
Examiner
Art Unit 2674

rl
December 31, 2002